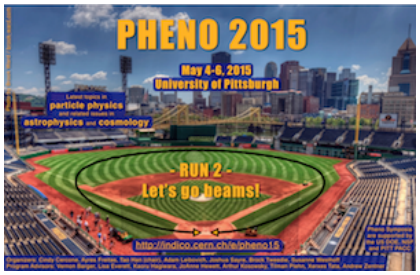

Contribution ID: **152** Type: **parallel talk**

Lepton-Flavored Dark Matter

Tuesday, 5 May 2015 15:15 (15 minutes)

In this work, we try to simultaneously address two puzzles related to dark matter and flavor. The first is tension between the new physics scale suggested by the measured dark-matter relic density, O(100 GeV - 1 TeV), and the null results from direct-detection experiments which suggest a lower bound on the new physics scale of O(10 TeV). The second is tension between the strong constraints on lepton-flavor-violating processes involving electrons and the 3.6-sigma deviation of the muon g-2 from the standard model expectation which suggests a new-physics scale < O(1 TeV). Here, we suggest that these may be related. We consider a gauged lepton-flavor interaction coupling at tree level only to mu- and tau-flavored leptons and the dark sector. Dark matter thus has loop-suppressed couplings to quarks and electrons. We find that a gauged flavor interaction at a scale O(100 GeV - 1 TeV) can be compatible with the muon g-2, the relic density, direct detection, indirect detection, charged-lepton decays, neutrino trident production, and results from hadron and e+e- colliders.

Primary authors: SONI, Amarjit (BNL); KOBACH, Andrew (Northwestern University); KILE, Jennifer (U Florida)

Presenter: KILE, Jennifer (U Florida)

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